

Abstract ID : 952

Title : Abundance, residency, and association patterns of female sperm whales in the northern Gulf of Mexico

Category : Behavior

Student : Not Applicable

Preferred Format : Poster Presentation

Abstract : Female sperm whales (*Physeter macrocephalus*) demonstrate a complex social structure described as ‘constant companions and casual acquaintances’, which is influenced by variation in within-population density. This variation suggests the ‘constant companions and casual acquaintances’ model may not apply to all sperm whale populations. The objective of this study was to quantify social structure of groups of female sperm whales in the northern Gulf of Mexico (Gulf), using photo-identification samples to examine abundance, association patterns and residency time.

We conducted field work in a 53,000 km² study area south of the Mississippi River delta from 2000-2002, identifying 102 individuals. We matched our catalog with whales in the North Atlantic Mediterranean Sperm Whale Catalog (NAMSC) identified in the same area in 1994, 1996 and 2002. Using all identifications, we estimated a mean population size of 190 whales (SE = 95).

Association patterns and residency times were estimated in SOCPROG 1.3, using our data and a subset of the NAMSC data that excluded whales first identified in 2002. Association patterns were analyzed using the half-weight index of association, and the association matrix was randomized to test the hypothesis of no preferred or avoidance companions. Of the models describing temporal patterns of association, “constant companions and casual acquaintances” best fit the data set.

Fifty-eight whales were identified on one occasion, twenty-seven were identified in two separate years and three were identified in three separate years. Residency time in the study area, determined by using the lagged identification rate, was approximately ten days. Of models fitted to the data, emigration + reimmigration + mortality best described the population.

Gulf whales appear to fit the social pattern described for other populations, and are part of a larger population of sperm whales in the northern Gulf.